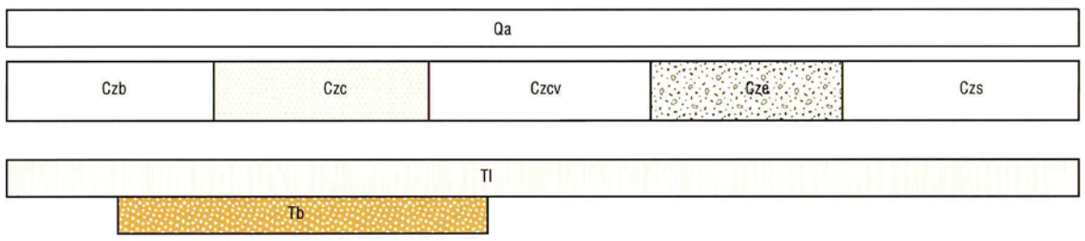



| | | |
|---|---|---|
| Qa | *Alluvial sand, silt, gravel and clay in channels and on floodplains* | QUATERNARY |
| Czb | *Grey clay and silt forming black soil plains* | MIOCENE TO QUATERNARY |
| Czc | *Sand, silt, gravel and clay, mainly colluvial, forming fans and scree slopes* | |
| Czcv | *Sand, silt and clay, alluvial and colluvial, forming dissected low-lying terrain* | |
| Cze | *Rubbly veneer on bedrock: residual and colluvial* | |
| Czs | *Sand and silt, mainly aeolian and sheet-wash deposits* | |
| Tl | *Ferricrete and ferruginous pisolitic gravel (laterite) cappings* | PALAEOGENE |
| Tb | *Bleached and mottled zone of lateritic weathering profile on pre-Cainozoic bedrock* | |

CAINOZOIC

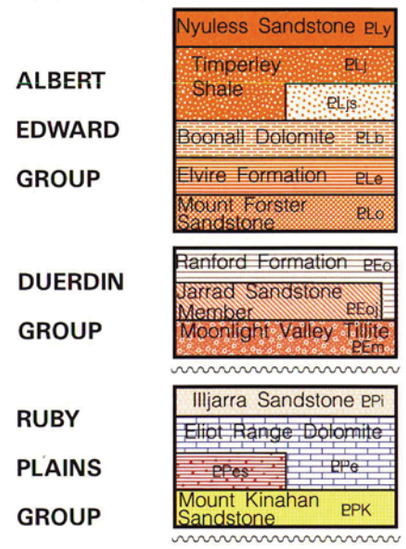
**HALLS CREEK OROGEN**

**WESTERN ZONE** | **CENTRAL ZONE** | **EASTERN ZONE** | **WOLFE BASIN**

PALAEOZOIC

**MAIN PHASE OF ALICE SPRINGS OROGENY ~ 300 Ma**

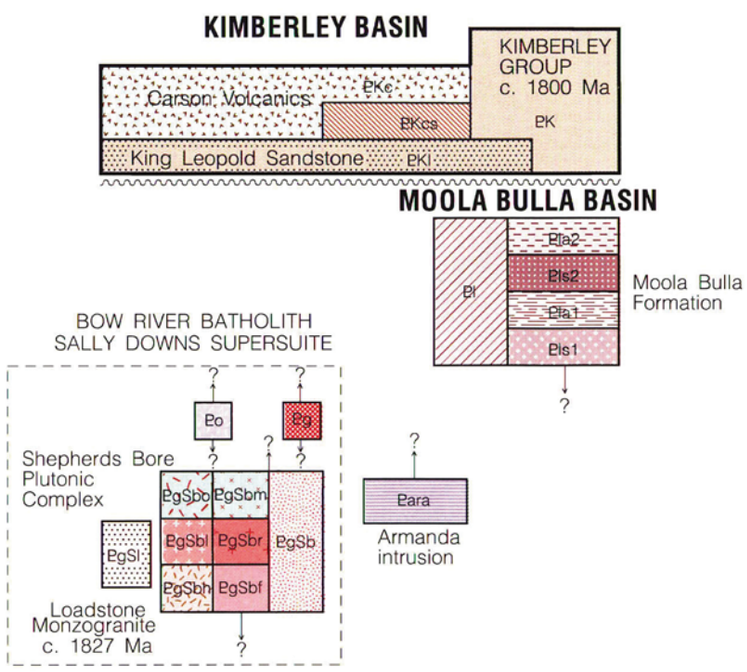
**KING LEOPOLD OROGENY ~ 560 Ma**




| | | |
|---|---|---|
| ℘Ly | *Quartz sandstone, lithic sandstone* | NEOPROTEROZOIC |
| ℘Lj | *Green-grey shale and siltstone: micaceous, locally calcareous* | |
| ℘Ljs | *Quartz sandstone, calcareous sandstone, siltstone* | |
| ℘Lb | *Dolomitic mudstone and sandstone; minor limestone* | |
| ℘Le | *Maroon and grey siltstone, partly calcareous; minor thin beds of quartz sandstone* | |
| ℘Lo | *Quartz sandstone; minor conglomerate* | |
| ℘Eo | *Purple, maroon and grey siltstone, shale, mudstone and greywacke* | |
| ℘Eoj | *Lithic sandstone, greywacke* | |
| ℘Em | *Tillite, commonly capped by laminated to thinly bedded dolomite* | |
| ℘Pi | *Lithic sandstone; minor siltstone and dolomite* | |
| ℘Pe | *Dolomitic mudstone, siltstone and sandstone; minor dolomitic breccia and black chert; stromatolitic* | |
| ℘Pes | *Dolomitic sandstone* | |
| ℘PK | *Quartz sandstone; minor conglomerate* | |

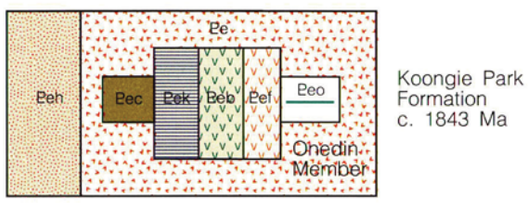
**YAMPI OROGENY ~ 1200 Ma**

MESOPROTEROZOIC

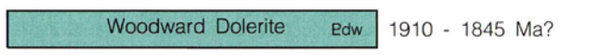



| | | |
|---|---|---|
| ℘K | *Sandstone, siltstone; commonly highly strained* | PALAEOPROTEROZOIC |
| ℘Kc | *Epidotic and chloritic amygdaloidal basalt; minor lithic sandstone and siltstone, dolerite (sills)* | |
| ℘Kcs | *Lithic sandstone; minor basalt* | |
| ℘Kl | *Quartz sandstone, lithic sandstone; minor conglomerate* | |
| ℘l | *Lithic sandstone, mudstone; minor conglomerate* | |
| ℘la2 | *Mudstone, lithic quartz sandstone* | |
| ℘ls2 | *Lithic sandstone, granule to pebble conglomerate* | |
| ℘la1 | *Mudstone, lithic sandstone* | |
| ℘ls1 | *Lithic sandstone, granule to pebble conglomerate; minor mudstone and cobble conglomerate at base* | |
| ℘o | *Undivided gabbroic rocks* | |
| ℘g | *Undivided granitic rocks* | |
| ℘gSb | *Porphyritic and non-porphyritic biotite monzogranite and syenogranite; minor granodiorite, tonalite and leucogranite; metasedimentary xenoliths and mafic enclaves common* | |
| ℘gSbo | *Gabbro, quartz gabbro, dolerite, leucogabbro; locally abundant granitic veins* | |
| ℘gSbm | *Complex mixture of gabbroic and subordinate granitic rocks* | |
| ℘gSbl | *Leucocratic biotite granite with high gamma-ray spectrometric signature* | |
| ℘gSbr | *Porphyritic biotite granite with high gamma-ray spectrometric signature* | |
| ℘gSbh | *Complex mixture of granitic, gabbroic, and hornfelsic (Koongie Park Formation) rocks* | |
| ℘gSbf | *Complex mixture of granitic and subordinate gabbroic rocks ± minor metasedimentary hornfels (Koongie Park Formation)* | |
| ℘gSl | *Weakly porphyritic biotite monzogranite and syenogranite* | |
| ℘ara | *Leucogabbro, gabbro; minor anorthosite* | |

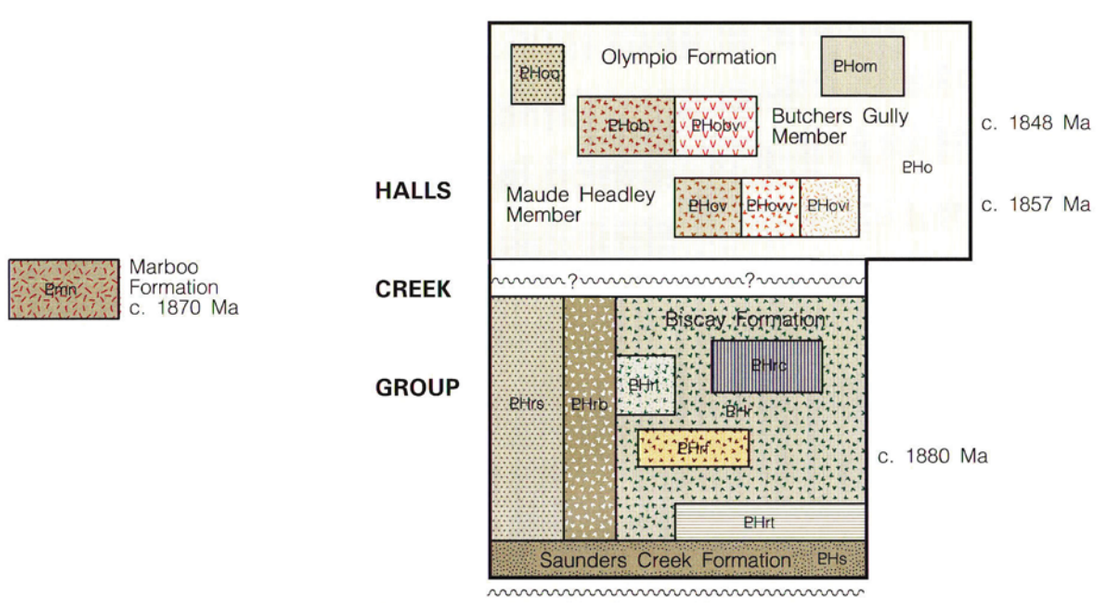
**MAIN FOLDING EVENT OF HALLS CREEK OROGENY c. 1835 Ma**



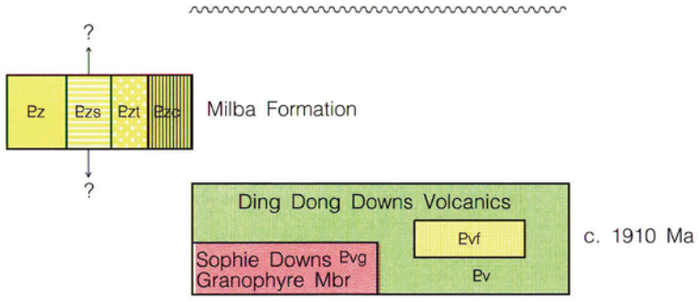

| | | |
|---|---|---|
| ℘eh | *Metasedimentary and minor metavolcanic hornfels, locally migmatitic* | |
| ℘e | *Undivided metamorphosed (low to high-grade) sedimentary and volcanic rocks, including turbidites, calcareous rocks and chert: commonly schistose* | |
| ℘ek | *Metamorphosed calcareous sedimentary rocks, including marble and calc-silicates; minor chert* | |
| ℘ec | *Metamorphosed chert, banded and locally iron-rich* | |
| ℘eb | *Metamorphosed basaltic volcanic and volcaniclastic rocks* | |
| ℘ef | *Metamorphosed felsic volcanic, subvolcanic and volcaniclastic rocks* | |
| ℘eo | *Metamorphosed shale, impure calcareous rocks, chert and ironstone* | |




| | | |
|---|---|---|
| ℘dw | *Metadolerite, amphibolite* | |




| | | |
|---|---|---|
| ℘Ho | *Metamorphosed (low to medium-grade) turbiditic mudstone, siltstone, greywacke, quartz wacke, and arkose; generally well cleaved or schistose* | |
| ℘Hom | *Metamorphosed (low to medium-grade) turbiditic mudstone, siltstone and greywacke, with many beds containing abundant secondary magnetite* | |
| ℘Hoq | *Metamorphosed turbiditic quartz sandstone and minor mudstone, siltstone and greywacke* | |
| ℘Hob | *Metamorphosed andesitic and trachytic volcanic, subvolcanic and volcaniclastic rocks; commonly abundant secondary carbonate; minor chert* | |
| ℘Hobv | *Metamorphosed dome-forming trachytic volcanic and subvolcanic rocks* | |
| ℘Hov | *Metamorphosed mafic to felsic trachytic volcanic and volcaniclastic rocks; abundant secondary carbonate; minor interlayered turbiditic mudstone and greywacke* | |
| ℘Hovv | *Metamorphosed dome-forming trachytic volcanic rocks* | |
| ℘Hovi | *Granophyric syenite sill* | |
| ℘mn | *Metamorphosed (medium-grade) schist containing quartz, muscovite, biotite, andalusite and altered cordierite* | |
| ℘Hr | *Metamorphosed (low to medium-grade) sedimentary rocks, commonly calcareous and basaltic; minor metamorphosed volcanic rocks and thin dolerite sills; generally schistose* | |
| ℘Hrb | *Metamorphosed basaltic volcanic and volcaniclastic rocks; minor pelitic interbeds, carbonate and chert lenses, thin metadolerite sills* | |
| ℘Hrs | *Metamorphosed interbedded sandstone, siltstone and shale, calcareous in places; schistose* | |
| ℘Hrc | *Metamorphosed calcareous sedimentary rocks, commonly schistose; also mylonitic* | |
| ℘Hrl | *Metamorphosed thinly interbedded basaltic volcanic and volcaniclastic rocks, pelitic schist; minor carbonate lenses and thin metadolerite sills* | |
| ℘Hrf | *Metamorphosed felsic volcanic and minor basaltic rocks* | |
| ℘Hrt | *Black slate, partly pyritic* | |
| ℘Hs | *Metamorphosed (low to medium-grade) quartz sandstone, lithic sandstone and minor conglomerate, greywacke, and siltstone* | |




| | | |
|---|---|---|
| ℘z | *Metamorphosed (low to medium-grade) calcareous and noncalcareous sedimentary rocks* | |
| ℘zs | *Metamorphosed greywacke, siltstone and sandstone; minor calcareous rocks and chert* | |
| ℘zt | *Metamorphosed lithic, feldspathic and quartz sandstone, greywacke, siltstone and mudstone; minor calcareous bands, chert and metamorphosed basalt* | |
| ℘zc | *Pure and impure marble; minor chert* | |
| ℘v | *Metamorphosed (low to medium-grade) amygdaloidal basalt, commonly epidotic; minor metamorphosed rhyolite, metasedimentary rocks and dolerite* | |
| ℘vf | *Metamorphosed rhyolite; minor interlayered metamorphosed basalt, sedimentary rocks and dolerite sills* | |
| ℘vg | *Leucocratic porphyritic granophyre and subordinate leucogranite, massive to schistose; minor amphibolite and biotite schist* | |